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ABSTRACT

The study compared the efficacy of proclamation, contracting, and contingent teacher approval in modifying the classroom behavior of 5 Negro adolescents. Proclamation consisted of a written statement of reward and punishment contingencies (points gained or lost) under which the class was operating, whereas the contracting phase permitted students to suggest revisions of the point system and formally endorse it by signing their names to a contract. Implementation of treatments and subsequent reversals indicated that both proclamation and contracting produced a high level of appropriate behavior, but the contingent teacher approval, in the absence of proclamation or contracting, did not maintain a high level of appropriate behavior. The principal conclusion derived from the results is that a student's formal endorsement of a contract, alone, will not radically alter his performance. (Author)

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PROCLAMATION VERSUS CONTRACTING IN CLASSROOM BEHAVIOR MANAGEMENT

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One behavioral management system that has been successfully applied to a variety of inappropriate behaviors is contingency contracting (Homme, 1964, 1965a). This procedure involves an agreement between two parties that one party will reinforce the other for performing the designated behavior within a stated period of time. The theoretical basis for contracting was stated by Premack (1959) in a simply worded dictum, "For any pair of responses, the more probable one will reinforce the less probable one." An initial attempt at implementing the Premack Principle proved highly successful for Homme, C'de Baca, Devine, Steinhorst, and Rickert (1963). The behavior of three undisciplined three years olds was swiftly brought under stimulus control by making a high probability behavior (running and screaming) contingent upon a low probability behavior (sitting in a chair and looking at a blackboard). Other applications of contracting have been in a state prison (Clements, 1968). a therapeutic setting (Sulzer, 1962), a therapeutic summer camp (Dinoff & Rickard, 1969), children on an Indian reservation (Homme, 1965a) and in the public schools (Anandam & Williams, 1970; Cantrell, 1969; Homme, 1964).

Although the Premack Principle implies that nature does not care who arranges the contingencies, Keirsey (1969) distinguished between types of contracting on the basis of who is the behavioral controller. He maintains that the essence of contracting is agreement by both parties that some act will be reciprocated by the other party. A proclamation is the arrangement and statement of the contingencies by the contingency manager (CM). No

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agreement is required, and the object of the contract is expected to act as stipulated. Thus a proclamation would not meet the criteria of a contract and would essentially be an imposition by the CM.

The primary purpose of the present study was to determine the relative effect of a contracting and proclamation system on the classroom behavior of senior high school students. In other words, the Es attempted to determine if formal student endorsement of a classroom behavior management system is fundamental to its effective implementation. A secondary objective was to compare the effectiveness of contingent teacher approval to that of contracting and proclamation as a means of controlling classroom behavior.

METHOD

Subjects

The Ss were five students in an eleventh grade English class composed of 28 black students and characterized by apathetic and disruptive behavior. The class was taught by a white instructor.

Subject one was described by the teacher as exhibiting erratic study behavior, being apathetic, and easily frustrated. Her attendance was poor and her classroom behavior consisted of talking and looking around. She had made little academic progress prior to the study.

Subject two was viewed by the teacher in a more favorable way since she sometimes completed assignments and contributed to class discussions. However, she spent much of her time in talking and engaged in study behavior only about 12% of the time.

Subject three was a "good student with untapped potential." Her attendance was good and she was active in school activities. Her inappropriate behavior consisted of paying minimal attention to the teacher, while conversing with S_1.

Subject four was the only student in the class enrolled in a college prep program. The teacher stated that she could be an "A" student but she generally made "C's" and "B's". She talked continuously and tended to laugh uproariously at the inappropriate behavior or other students.

Subject five was a former Golden Gloves boxing champion whose behavior was characterized as hostile and disruptive. He was the poorest reader in the class, but refused to transfer to a remedial section. Many of his verbalizations were hostile or obscene. He paid little attention to the teacher and generally did as he pleased.

Procedure

Behavioral observation. Classroom observation, consultation with the teacher and administration of a student survey sheet were the three procedures used by the Es in formulating operational behavior categories. The student survey sheet (SSS) was a questionnaire in which students were asked to list (1) activities they would enjoy if they were given free time and (2) behaviors they would not allow other students to engage in if they were the teacher. A compilation of the answers proved valuable in determining behaviors considered inappropriate by the students and events that were potentially reinforcing. In addition, the teacher was asked to identify behaviors that he considered disruptive to the class. He mentioned such behaviors as yelling, leaving class without permission, and refusing to comply with teacher requests. Analysis of the information resulted in the adoption of thirteen behavioral categories similar to the ones employed by Madsen, Becker, Thomas, Koser, and Plager (1968) and Cormier (1969). Table 1 describes the behavior categories. A time sampling system with ten second intervals was used in recording these behaviors.

Insert Table 1 here

Training of observers consisted of having them rate both video taped and live episodes of classroom behavior. Training continued until each O achieved at least 80% inter-rater reliability. Observers then observed the Ss on a daily basis. The Os were instructed to ignore attention from students and generally be as unobtrusive as possible while in the classroom. All changes in experimental conditions were instituted without informing the Os of these changes. Weekly checks of reliability were made for the duration of the study, with average reliabilities for all Os ranging from 86 to 97%.

Treatments. The experimental conditions consisted of baseline (15 days), teacher reinforcement plus the proclamation (15 days), contingency contracting (25 days), reversal of contracting (3 days), reversal of the point system (4 days), and contract reintroduction (5 days).

No experimental treatments were introduced during baseline. The teacher was advised to proceed in his usual manner. The only change in classroom procedure was that observers were present.

In the second phase of the study, the teacher was instructed to attend to appropriate student behaviors and minimize attention to inappropriate behaviors. Attention to appropriate behaviors consisted of praising, touching, smiling at, talking to, and looking at the target students while they were engaged in task relevant behavior.

The proclamation system was introduced concomitant with teacher reinforcement. The proclamation consisted of a written statement of the contingencies, with numbers of points gained or lost for appropriate and inappropriate behaviors. Behaviors that had been listed in the SSS as inappropriate resulted in points being deducted from the students scores, whereas appropriate behaviors resulted in an addition of points to the Ss' daily totals. Points were computed at the end of class and posted on a record sheet in the

front of the classroom. Each student received a daily grade based on his point total. The curriculum in the experimental classroom was built around programmed materials. These materials were introduced in conjunction with teacher reinforcement and the proclamation and were used throughout the study.

The second experimental phase involved introduction of a behavioral contract. The students were initially given copies of the behavioral contract for their examination and signature. The contract contained basically the same contingencies as the proclamation. The basic differences were (1) the contract was a written agreement to be signed by both teacher and student, and (2) the contract included a provision for free time activities.

Twenty-six of the twenty-eight students signed the contract. The two who did not sign remained under the conditions outlined by the proclamation. All students gained points for appropriate behavior and lost points for inappropriate behavior; however, only students under the contract could earn free time activities. These included (1) freedom to talk to another class member, (2) access to comic books, a record player, magazines, games, and art materials.

The reversal phase consisted of sequential return to baseline by first removing the terms of the contract while retaining the terms of the proclamation and secondly by reversing the proclamation. The students were first told to destroy the contract, but that their grades would continue to be determined by the point system. After three days the students were informed that the point system would no longer be in effect, that points could no longer be gained or lost and that they could no longer earn free time. The teacher was instructed to continue attending to appropriate behavior and ignoring inappropriate behavior. However, if a student be-

came openly disruptive the teacher was to handle the behavior any way he chose.

The final experimental condition consisted of a re-introduction of the contract. Again, 26 of 28 students signed the contract.

RESULTS

For purposes of analysis and presentation, the 13 observational categories were combined into two more inclusive categories of appropriate and inappropriate behavior. The categories were grouped as follows: (1) appropriate behavior - studying, verbal response, attending, obeying, hand raising, and working; (2) inappropriate behavior - talking without teacher permission, motor behavior, excessive noise, passivity, oppositional behavior, working on unassigned task, eating, and inappropriate behavior.

Percentages of ten-second intervals in which appropriate and inappropriate behaviors occurred per session for each S are graphed in Figure 1. The behavioral data of all Ss are combined in Figure 2. These data were derived by averaging the percentages of appropriate and inappropriate behavior emitted by all Ss for each observational session.

During baseline the behavior of S_1 was erratic; however, appropriate behaviors usually constituted 50% or less of the total emitted behavior. Proclamation implementation produced an almost immediate shift to high rates of appropriate behavior, which were maintained through the contracting phase. Contract reversal produced no noticeable decrement in appropriate behavior, whereas point system reversal produced a return to a baseline level of inappropriate behavior. Under re-introduction of contracting an 80% level of appropriate behavior was quickly re-established.

Because S_2 dropped out of school during the second phase of the study, her behavior was never reversed. However, her behavior showed significant

changes concurrent with the implementation of treatment. Rates of appropriate behavior quickly reached 70% and were maintained until S left school.

Examination of Figure 1 reveals that the appropriate behavior of S_3 quickly reached a high level under proclamation and was maintained at that level until point system reversal. Re-introduction of the contract produced a recurrence of a high level of appropriate behavior.

Subject 4 emitted extremely high rates of inappropriate behavior under baseline. Although her response to the treatments was somewhat slower than that of the other Ss, her appropriate behavior soon reached fairly high levels. This level of appropriate behavior was maintained under the contracting and contract reversal phases, but point system reversal produced a rather dramatic decrement in appropriate behavior. Contract re-introduction produced a return to the treatment levels of appropriate behavior.

Under baseline, S_5 showed erratic rates of generally inappropriate behavior. Introduction of the proclamation produced a gradual but steady behavior change until the S's appropriate behavior was around 75%. Appropriate behaviors were maintained until the point system reversal at which time inappropriate behavior returned to rates similar to those under baseline. Appropriate behaviors quickly recovered under contract reintroduction.

Insert figures 1-5 about here

DISCUSSION

A major contribution of the present study is that it demonstrates the feasibility of using operant techniques to modify the behaviors of an entire class even under unfavorable environmental conditions. The latter included a classroom which was extremely hot during the final stages of the study, an

overcrowded classroom, excessive noise from the street, a split class period, i.e., half of the students were dismissed ten minutes before the end of the period, and a student strike which occurred three weeks before the end of the study. If behavioral control was achieved under these conditions, it seems reasonable to assert that it could be achieved in most classrooms through the use of similar techniques.

The principal conclusion which can be derived from the results of the present study is that a student's formal endorsement of a behavioral management system is not a crucial determinant of his behavior. That is, the mere fact of a student's signing his name to a contract will not radically alter his performance. A qualification of this conclusion is that the type contracting employed in the present study did not permit students to negotiate each day for academic events and rewards. Instead, change in study materials could be effected only through renegotiation of the contract. Choice was a viable factor only during free time when the students could select from an array of reinforcing activities. Therefore, signing the contract simply meant that the student formally agreed to abide by the terms of a contingency management system which he had helped to formulate. Participation in the formulation of the system may be much more crucial than affixing one's name to it, once it has been formulated. It appears that: (1) if the contingencies of a contract are specified and understood by the student; (2) if the student can emit or can be shaped to emit appropriate behavior; and (3) if the response consequences are reinforcing and contingent upon emission of appropriate behavior, then the student's behavior can be modified irrespective of whether he formally accedes to the specified contingencies.

Contract signing produced few emotional responses of significant magnitude, although a few students laughed about the contract and regarded it as

a game. Two students in particular seemed to regard contract signing as a stigma. They tended to equate the type of control imposed by the contract, i.e., a specific stating of the contingencies, with the kind of program that would be conducted in a remedial class. The sensitivity that they might be in a remedial program had been a potent factor before the research began, and several students had frequently verbalized their desire to have classes that "studied the same thing as the white schools." Most students were passive and accepted the contract with little overt reaction.

Whereas signing the contract was, in most cases, a perfunctory act, the behavior of refusing to sign was an oppositional act accompanied by inappropriate verbalizations. During the study three students (none of the target Ss) refused to sign the contract. One refused to sign under both contracting and contract re-introduction, one refused under contracting, and one under contract re-introduction. The behavior of these three was among the most disruptive of any students in the class. They were antagonistic, oppositional, verbally negative regarding the system, and overtly aggressive toward some of their classmates who continued to work. Control over their behavior was transient, with appropriate behavior being erratic and never reaching acceptable levels.

The behavior of the students under both proclamation and contracting was quite similar. A possible explanation of these similar response patterns was suggested by examining the reinforcers which controlled behavior under each subphase. Before the proclamation was introduced, the students were engaging in little study activity and failing to complete assignments. Since the teacher was not in control, many difficult subject matter tasks were met with oppositional behaviors or apathetic stares. With the implementation of the proclamation the teacher gained control of the students' behavior.

The students found that daily success, teacher praise, and immediate feedback were reinforcing. Some verbalized their dislike of the point system, but nevertheless continued to function appropriately. Once the teacher gained control of the class, that control was not relinquished until point system reversal. Contract introduction incorporated the conditions of the proclamation subphase, so the students remained under the control of essentially the same reinforcers throughout the two phases. Another relevant factor may have been a "ceiling effect" in emitted behavior. In this case, the contracting phase may have simply maintained appropriate behavior at the near ceiling level reached in the proclamation subphase.

A secondary objective of the current study was to appraise the relative efficacy of proclamation, contracting, and contingent teacher aprroval in controlling classroom behavior. In as much as the reinforcing events dispensed under the proclamation were presented in combination, it is not possible to specify the reinforcement potency of each variable. However, since teacher approval was presented in combination with points and back-up reinforcers during contract reversal and without points and back-up reinforcers during proclamation reversal, some tentative judgments can be made about the efficacy of teacher approval compared to proclamation and contracting in controlling classroom behaviors. It appears that the teacher may have been (1) a poor source of positive reinforcement for the student's appropriate behavior or (2) an inefficient dispensor of appropriate reinforcers. Conditions in the classroom were contrived to maximize the possibility of producing teacher control of student behaviors; despite this, there was no indication that teacher reinforcement could maintain appropriate behavior unless it was dispensed in conjunction with other generalized reinforcers.

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Table 1

Behavioral Coding Categories for Students' Appropriate and Inappropriate Behaviors

1.	Studying, reading, writing or working on the assigned activity at one's desk	S
2.	Verbal Response: Conversation with teacher or answering teacher questions	V
3.	Listening (Attending) Head and body oriented to the teacher or to a reciting student	L
4.	Obeying any direct teacher request or demand (emitting some motor response), or ceasing to emit some response	B
5.	Hand-Raising Raising hand for teacher recognition	H
6.	Any verbalization without permission, talking, blurting out, whispering	T
7.	Motor Behaviors: Walking, standing, combing hair, putting on makeup (without teacher permission)	M
8.	Noise: Any unnecessary or excessive noise, tapping, tearing and rattling papers, dropping books, moving desk, whistling	N
9.	Passivity: Sleeping, laying head on desk, fixedly staring into space for more than five seconds	P
10.	Oppositional Behaviors: Ignoring teacher commands	O
11.	Working on some task other than the assigned one	/
12.	Eating in class	E
13.	Inappropriate: Turning head or body to look at another person, attending to another person not engaged in study behavior (only if no talking)	I

Table 2

High School Behavior Contract for 3rd Period English--
Contract Introduction

	Consequences
I. Being Prepared for Class	
1. Attending class	Gain 1 point
Not attending	0 points
2. Being on time to class (checked when door close	Gain 1 point
Being late	0 points
3. Bringing paper, pen or pencil	Gain 1 point
Failure to bring these items	0 points
II. Classroom Conduct	
1. Working on lesson	Gain 1 point (for each 5 minutes of work)
2. Completing Comprehension checks	Gain points as follows: 100%---6 points 90-99--5 points 80-89--4 points 70-79--3 points Below 69--2 points
3. Completing Unit Tests	Gain points as follows: 100%--20 points 90-99-18 points 80-89-15 points 70-79-12 points Below 69-9 points
4. Behaving correctly, no class disturbances	Gain 2 points
5. Doing homework of extra assignments	Gain up to 3 points
III. Negative Behavior	
1. Talking without teacher permission	Loss of 1 point (each time recognized by teacher)

Negative Behavior (cont.)	Consequences
2. Leaving class without permission	Lose 2 points
3. Cheating	Lose 2 points (if recognized by teacher)
4. Causing a classroom disturbance	Lose up to 3 points
5. Not working on lesson	No points gained while not working

Your grade will be determined by the number of points you achieve. You will be graded every day. Nineteen or above gives you an A, 14-18 a B, 8-13 a C, and below 8 a D. You will also be graded each week. In a regular week--5 school days--95 points and up gives you an A, 70-94 a B, 40-69 a C, and below 40 a D.

In addition to grades, certain privileges will be based on the points you achieve. During a specified portion of each class period, a student can have five minutes of free time for having earned 11 points. During this free time you may do any one of the following activities:

a. Read comics, books, or magazines
b. Play games provided
c. Participate in other available activities

Since some of your classmates may be working on their assignments while you are enjoying an activity, it is important that you be very quiet while you are engaging in the activity. Loud talking or any other disturbance during the activity will cause loss of free time for that day and a point deduction from your total.

Each day at 11:40, time will be called. All those who have been working and have not lost more than 1 point for any reason will be given 5 minutes of free time.

I, _____, agree to abide by the conditions and consequences specified in this contract and agree to take the grade decided according to my own behavior and performance on tests.

Student_____

I, _____, as your teacher, agree to help you with your tasks and award grades and privileges according to the specifications of this contract.

Teacher_____

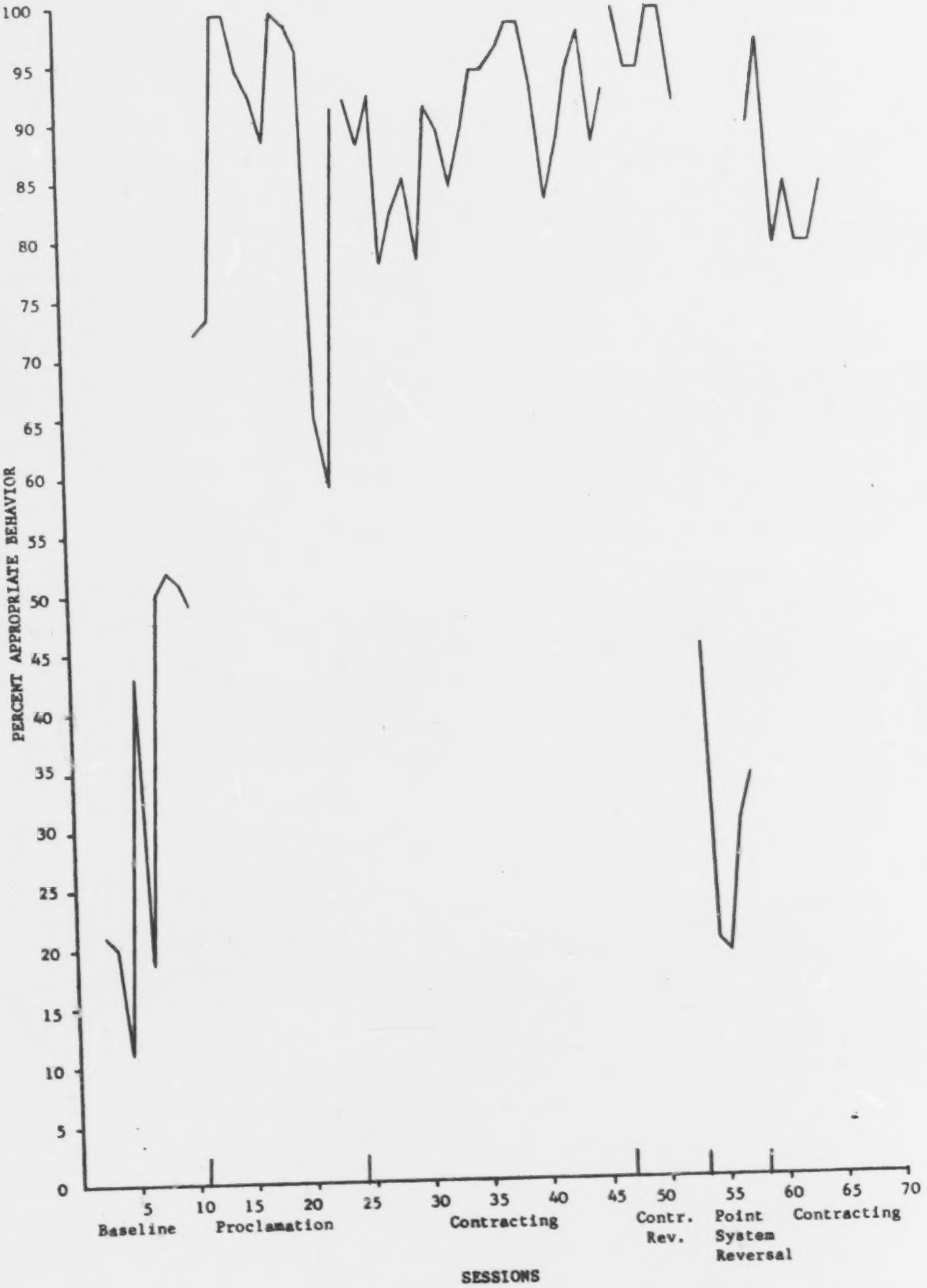

Figure 1. Percentage of appropriate behavior in each observational session for S_1 under different experimental conditions.

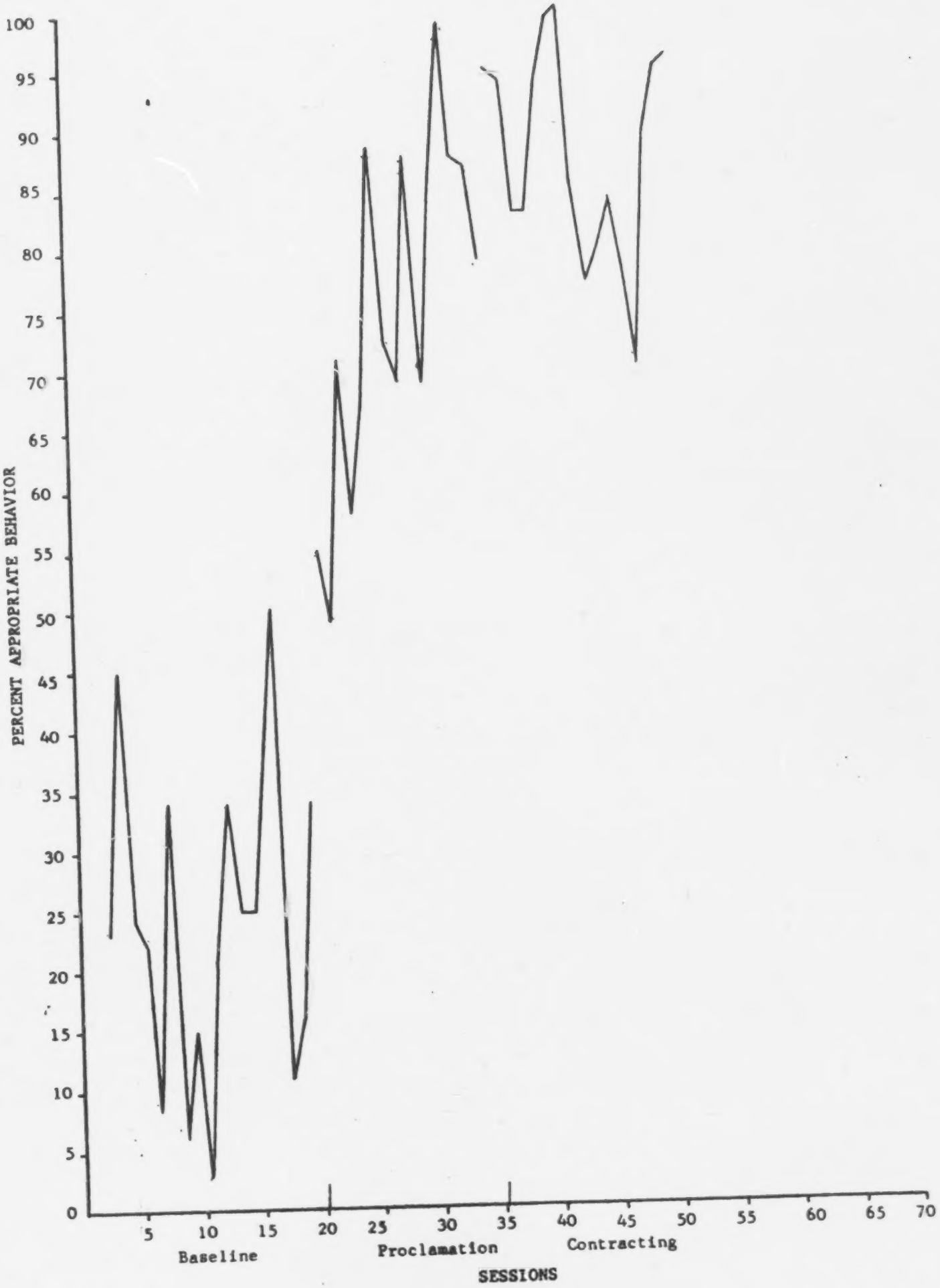

Figure 2. Percentage of appropriate behavior in each observational session for $\underline{S}_2$ under different experimental conditions.

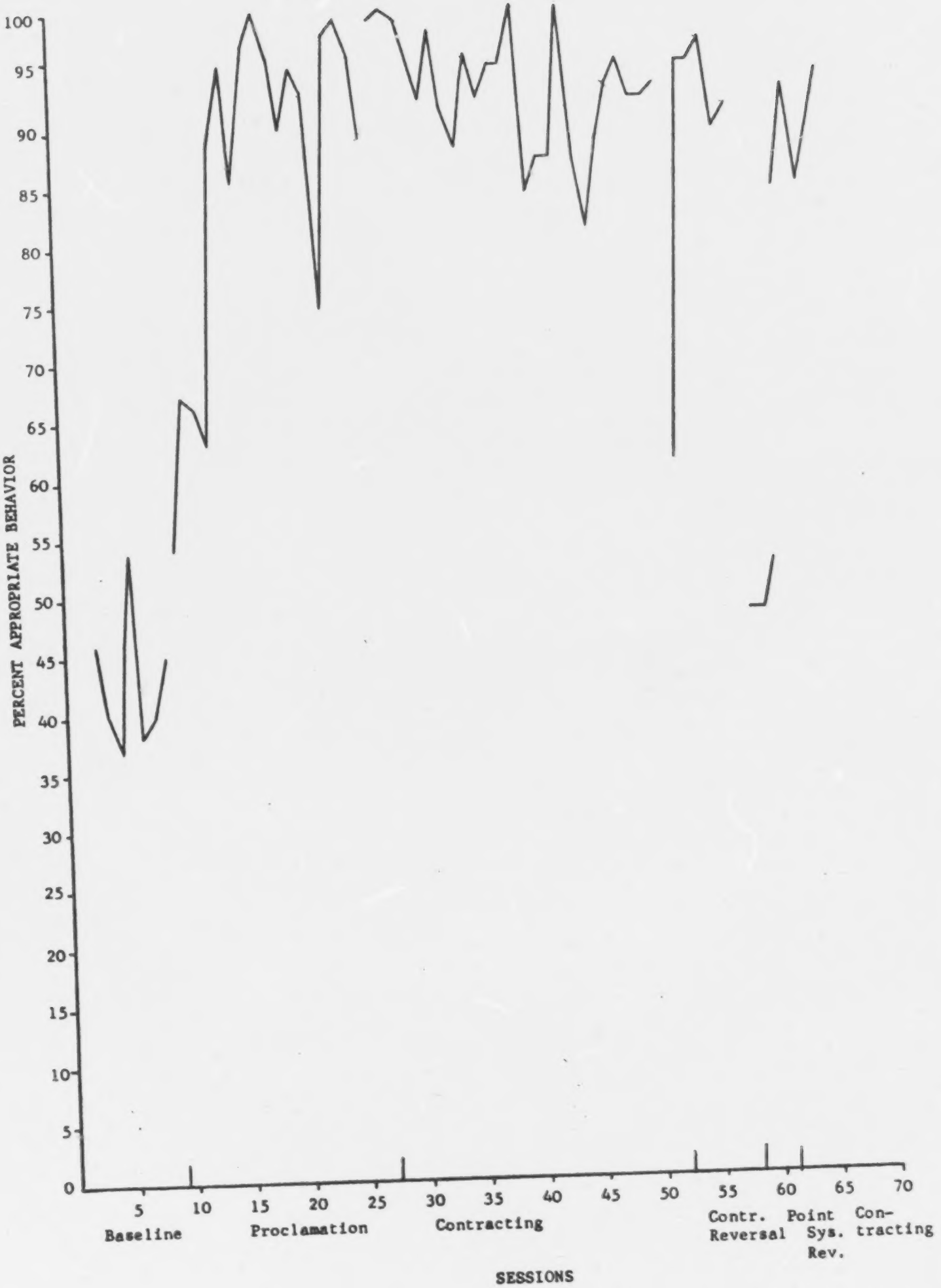

Figure 3. Percentage of appropriate behavior in each observational session for $\underline{S}_3$ under different experimental conditions.

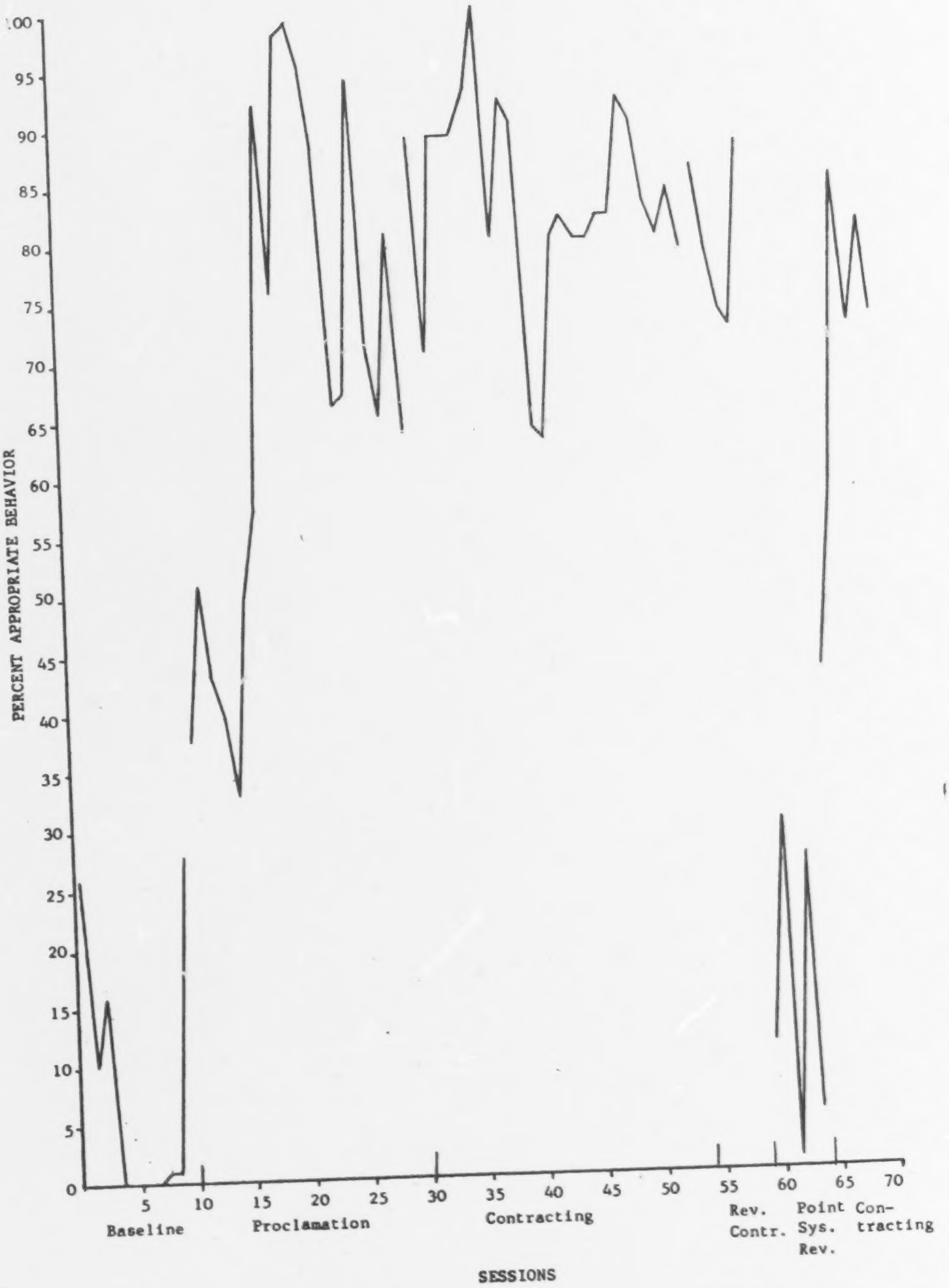

Figure 4. Percentage of appropriate behavior in each observational session for S_4 under different experimental conditions.

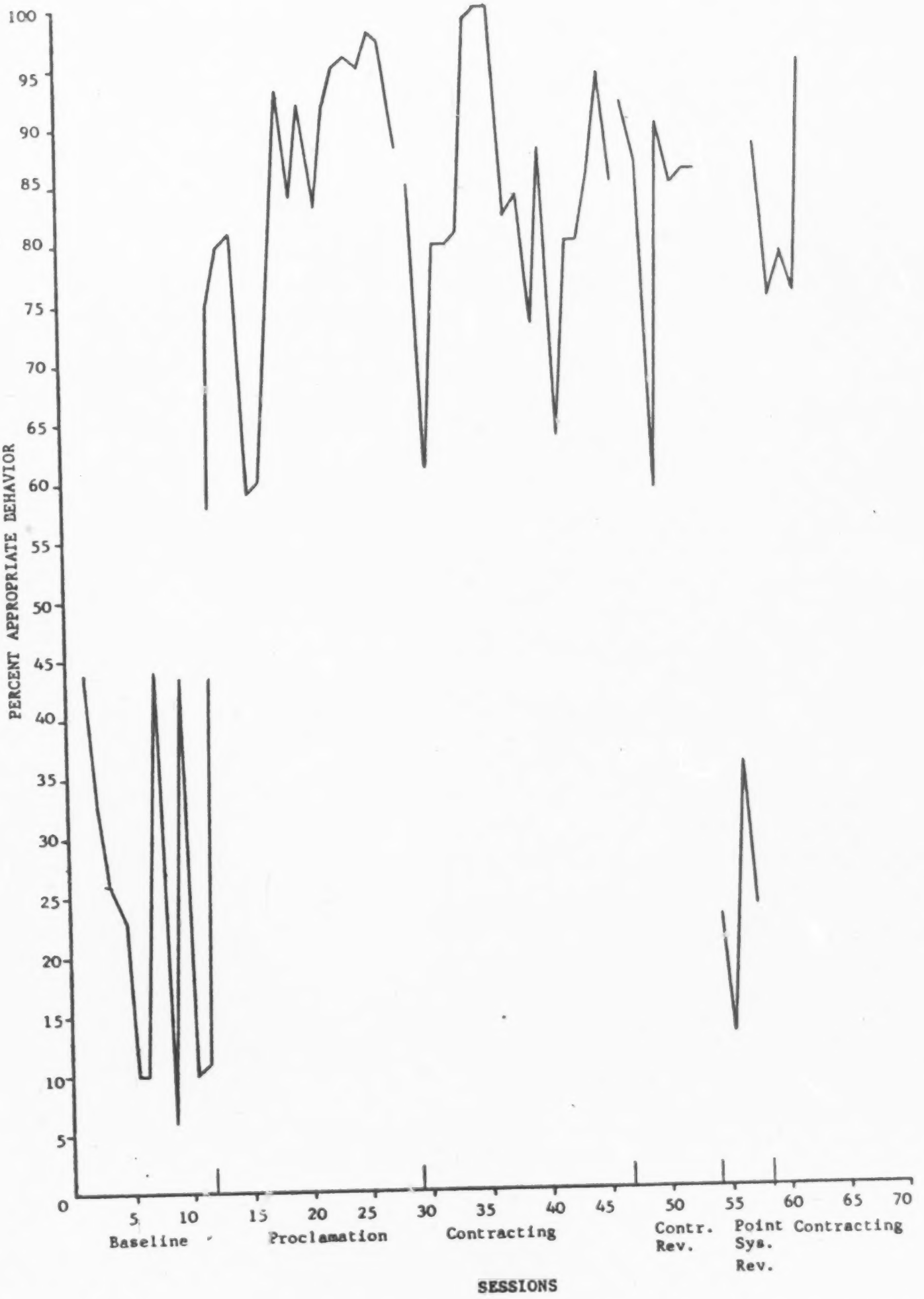

Figure 5. Percentage of appropriate behavior in each observational session for $\underline{S}_5$ under different experimental conditions.